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Interdisciplinary: Cultural competency and culturally congruent education for millennials in health professions

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SUMMARY

The increasingly diverse multicultural and multigenerational student population in the United States requires that educators at all levels develop cultural knowledge, awareness, and sensitivity to help diverse learners fulfill their potential and to avoid cultural misunderstandings that can become obstacles or barriers to learning. The purpose of this study was to design and implement eclectic, creative, evidence-based interdisciplinary educational activities, along with culturally congruent teaching strategies, within a semester-long university course that promoted positive and culturally competent learning outcomes for culturally diverse, largely millennial students. The interdisciplinary course would prepare health professional students with the requisite knowledge and skills, through transformative learning that produces change agents, to provide culturally congruent and quality team-based care to diverse populations. This was a qualitative and quantitative study, which measured students' level of cultural awareness, competence, and proficiency pre and post the educational intervention. Instruments used for data collection included the Inventory for Assessing The Process of Cultural Competence-Student Version (IAPCC-SV) by Campinha-Bacote, course evaluations, students' feedback, and portfolio reflections. The study was conducted at a private academic institution located in the Mid-Atlantic region and the sample population included inter-professional students (N = 106) from various health professions including nursing, pharmacy, and allied health sciences. Results from the pre- and post-test IAPCC-SV survey revealed that mean scores increased significantly from pre-test (60.8) to post-test (70.6). Thus, students' levels of cultural competency (awareness, knowledge, skills, desire, encounter) improved post-educational intervention, indicating that the teaching methods used in the course might be applied on a larger scale across the university system to cater to the nation's increasingly multi-cultural population.

Introduction

The United States is a country of growing diversity, which demands that individuals and health care systems function in a culturally competent way. The Institute of Medicine (2002) cites that sources of current disparities in culturally competent care include failures in the healthcare system, cultural and linguistic barriers, and a subtle mixture of bias and prejudice during the clinical encounter. The later is compounded by a shortage of minority providers in all sectors of healthcare (nurses, pharmacists, physicians, allied health professions, etc.). A Sullivan Commission report *Missing Persons: Minorities in the Health Professions* (2004), addressed growing concerns over U.S. health care quality and access for a population that is becoming increasingly diverse in respect to socioeconomics, gender, race, age, ethnicity, culture, abilities, and language. The Commission confirmed the broader perspective of not only increasing minority representation in health professions and providing a multicultural and inter-professional education (IPE) built on the ideals of social justice and civic responsibility, but also delivering of culturally competent care.

Thus, culturally competent health professionals are a necessity in today's health care arena and will play a critical role in reducing health disparities and improving health outcomes. The key to cultural competency and culturally congruent care lies in the ability of health care providers to "craft respectful, reciprocal and responsive effective interactions across diverse cultural parameters" (Barrera et al., 2002, p.103). Teaching future health care professionals about specific cultures has been insufficient because it does not allow for the development of an understanding of cultural competence for application in practice. Therefore, educators should adopt eclectic culturally congruent teaching–learning strategies (Jeffreys, 2006) supported by concepts and theories rather than the traditional rigid approach of memorizing facts in order to understand specific cultures. Furthermore, it is imperative that educators link and bridge cultural self-awareness, knowledge,

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theory, and communication skills in teaching culturally congruent care for millennial health professionals.

According to Howe and Strauss (2007), the millennial generation is loosely defined as those born after 1982 (also referred to as Generation Y). In the Fall of 2000, the first millennials began to enter college, and it has become imperative to consider some of the defining traits and characteristics of this generation when designing coursework. Millennials, as future health care professionals, are more racially and ethnically diverse than preceding generations. Peter Leyden (in Howe and Nadler, 2010) stated that millennials are "not individualistic risk takers like Boomers, or cynical and disengaged like generation X, but they are civic minded, trust in leaders, and are team oriented" (p.15). Furthermore, Millennials are not follower of trends but starting own trend; not self-absorbed but team oriented and value community services; not rule breakers but rule followers; not aimless but highly directed and achievers (Howe and Nadler, 2010). These characteristics shaped our teaching–learning strategy for these active learners, leading us to design the course in a manner that avoided any assumptions, impositions, or judgments in the introduction and practice of culturally competent care and professionalism.

Accreditation standards across health care professions call for cultural competency education in order to prepare future health care providers to care for increasingly diverse populations effectively and efficiently. For example, for the profession of physical therapy, the Commission on Accreditation of Physical Therapist Education includes the importance of cultural competency throughout curriculum plan, evaluation and content (CAPTE, 2011). The PT Profession Practice Expectations are to "provide culturally competent physical care services to individuals, groups and communities" (p.30); "expressively and receptively communicates in a culturally competent manner with patients/clients, family members, caregivers, practitioners, interdisciplinary team members" (p.31, 5.17); "identify, respect and act with consideration for patients' differences, values" (p.31, 5.18); and "effectively educate others using culturally appropriate teaching methods" (p.31, 5.26). Additionally, The Accreditation Counsel for Pharmacy Education (Guideline 9.1) states that "in developing knowledge, skills, attitudes and values in students, schools must ensure that curriculum addresses patient safety, cultural competence, health literacy, health care disparities, and competencies needed to work as a member of an inter-professional team" (ACPE, 2006, p.15). In general, cultural competence is now a mandate (Office of Minority Health, 2001), and must be measurable (American Association of Colleges of Nursing, 2001).

Literature Review

According to Omeri (2008), the last few decades exhibited "transcultural nursing knowledge development through theory, research, and practice", even though "there remains a lack of formal, integrated cultural education into nursing" (p.x). Health profession educators and researchers have questioned and evaluated the effectiveness of current educational interventions (workshops, free-standing courses, imaginative literature, cultural immersion programs) that were designed to improve cultural competence level of their students (Newcomb et al., 2006; Purden, 2005; Brathwaite, 2006; Fitzgerald et al., 2009; Campinha-Bacote, 2010). Brennan and Cotter (2008) report that such interventions are neither robust nor efficient.

Our personal experiences as university-level health care educators have shown the results of these studies to be extremely accurate and reflective of current education practices. The studies reflect the inefficiency of many current courses that aim to teach culturally competent health care. Such courses utilize a "textbook" method that places excessive emphasis on memorizing cultural characteristics and clues, without sufficient focus on developing the skills to apply this knowledge in practical settings. Students often have difficulty relating to topics of study as lessons are presented with little to no consideration of the cultural background of the students. This lack of interactive educational activities and of any comprehensive approach to students' cultural and educational backgrounds results in a fragmented approach to learning and applying cultural knowledge. Instead, a more holistic approach should be adapted that would more effectively suit the diverse student population (multiple education systems, multicultural population, varied gender identifications, racial and ethnic diversity, etc.) and that would address all phases of developing culturally conscious attitudes and care beyond basic fact-memorization, such as: acknowledgment and understanding of one's own cultural biases, of which students may not be conscious (such as conflicts between personal values and beliefs and those of a health profession); and interactive and inter-professional exercises that allow students to practice applying learned cultural knowledge and to develop effective communication skills. The importance of such inter-professional work is supported by Cooper et al. (2001) who suggested that the earlier students are exposed to inter-disciplinary practice within the curriculum the more likely they are to practice with in an interdisciplinary model following graduation.

Purpose

Based on our observations, we began to formulate an experimental course to investigate ways of addressing the elements we found lacking in current health care education. The aim of the study was to design and implement creative, evidence-based interdisciplinary educational activities that promote positive and culturally competent learning outcomes for millennial students. The semester-long elective course, "Culturally Congruent Care for Clinical Health Professions," would prepare future health professional students with the requisite knowledge and skills through "transformative learning that produces change agents" (Frenk et al., 2010, p.1924), to provide culturally congruent and quality team-based care to diverse populations as a means of reducing health disparities. The study aimed to promote team collaboration and effective communication between students of different health professions, resulting in mutual respect and appreciation of each profession's roles and responsibilities in patient-centered care.

Course Design

The "Culturally Congruent Care for Clinical Health Professions" course is an interdisciplinary elective educational activity that was specifically designed for a variety of inter-professional health science students. It is a three-credit course (three hours per week for 14 weeks) consisting of 2 hours of classroom instruction a week, supplemented by one hour of outside activities (reading materials, DVD segments, field trips/community immersion, interviews, e-learning and online discussion forums, etc.).

At the start of the educational intervention, the focus was to attract and engage students from the school of Pharmacy, Nursing and Allied Health Sciences. The Center for the Advancement of Interprofessional Education (CAIPE) report defined inter-professional education (IPE) as when "two or more professions learn together, learn from each other, and/or learn about each other's roles in order to improve collaboration and quality of care" (CAIPE, 2002). Edward Pecukonis et al. emphasize the importance of such an approach: "If we are to achieve effective and fully integrated interdisciplinary education, we must decrease profession-centrism by crafting curriculum that promotes interprofessional cultural competence." (Pecukonis et al., 2008).

Eclectic culturally congruent teaching–learning strategies (Jeffreys, 2006) for active/passive and process/product learners include: lectures of applied framework, models and theories of effective cross-cultural communication, assessments, and negotiation. Models such as the Purnell Model for Cultural Competence (2003), Leininger's Theory of Culture Care Diversity and Universality (1991), and the Transcultural Assessment Model (Giger and Davidhizar, 2008) were also used in the

course. Activities included "low-stakes" written assignments such as self-heritage assessments and journal reflections (Jeffreys, 2006, 2010); lively discussions of cultural issues integrated into case-based and literature-based sessions (journal articles, evidence-based research; case studies that relate to students' profession and diverse cultures); and a short multiple-question exam. It also became essential to integrate interactive e-learning methodologies as a preferred strategy for "tech-savvy" millennial students, such as: structured online discussion and debate; web-search and article retrieval; loss and grief interview via Web-Based Conference (Webinar) with grieving persons; Audience Response System ('clickers') to examine sensitive issues without revealing students' identities; and use of Wiki for final team project as a "high-stakes" written assignment (Jeffreys, 2006, 2010). "Attention grabbers" (Ring et al., 2008, p. 7) such as guest speakers and DVD/video vignettes were used to stimulate discussion and involvement ("*Worlds Apart*" (*Muslim man*, *African American man*, *Laotian child and Mexican-American woman*) and "*Unusual Causes: Is Equity Making Us Sick?*"). Interactive teamwork activities—"skill builders" (Ring et al., p. 7) allowed students to work in multi-cultural and inter-professional groups to understand the concept of 'comfort zone' and to practice interviewing strategies and human simulation scenarios (with debriefings), where students act as both patients and health care providers. Finally, students participated in a one-day community immersion experience (worship places, Amish community, tattoo parlor, funeral, gay parade, etc.). The variation in topics and class activities challenged and energized the teacher and students to grow in their attitudes, awareness, desire, knowledge, and skills.

Culturally specific issues were discussed to reflect the multicultural population of both the local community and the students themselves. Areas of discussion were presented in clusters of related topics and included:

- Students' awareness of own cultural heritage (ethnic-racial identity, gender, sexual orientation, and family's health practices and beliefs) with biases and stereotypes that affect professional encounters and interactions with patients, families and members of the inter-professional team, and providing quality of care
- Social determinants (education, culture, socio-economic status, etc.) and major areas of disparities in healthcare
- Culture and values of health profession with anticipated behavior, civility, accountability, professionalism, inter-professional teamwork and effective verbal and non-verbal communication and negotiated care, appreciation of roles and responsibilities of each health profession, and understanding of their generational differences and similarities in academia and future workplace
- Homeless and mentally ill vulnerable populations
- Culture of lesbian, gay, bisexual, transgender (LGBT) population, persons living with HIV/AIDS, disparities related to age, gender, and sexual orientation
- Deaf culture and persons with disabilities
- Immigrants' health issues (female mutilation, breast ironing, abuse, etc.)
- Body beautification/mutilation (extensive tattoos, piercing, amputations, etc.)
- Cultural considerations and attitudes toward death and suffering in terminal illnesses, end of life decisions and care, and spirituality
- Ethnic pharmacology, complementary/alternative care, healing traditions and beliefs of patients and their families, and negotiated care
- Organ donation (misperceptions, "Tuskegee Study", need for minority organ donors, etc.)
- Social justice awareness and systems of domination and oppression that foster vulnerability.

The concept of 'caring' within health care practice was integrated in all the above topics.

Methodology

This was a qualitative and quantitative study that measured health professional students' level of cultural awareness, competence and proficiency pre and post intervention over the duration of one semester. Instruments used for data collection included the Inventory for Assessing The Process of Cultural Competence-Student Version (IAPCC-SV) by Campinha-Bacote (2007), course evaluations, student feedback, and portfolio reflections. Eclectic, fun, likable, and customized culturally congruent teaching–learning strategies that fit students' learning abilities (Jeffreys, 2006, 2010) were used to match the culturally diverse student population/generation/sexual orientation/religious values and beliefs/specialty/profession with emphasis on process of "becoming" culturally competent (Campinha-Bacote, 2003) through integration of cognitive, practical and affective learning (Chen and Starosta, 2000). Health science students completed the 20-items, paper/pencil instrument prior to the beginning of the course activities and at the completion of the course.

Sample

This study was conducted at a private academic institution located in the Mid-Atlantic region. There were two sample populations: one from Spring 2010, and the other from Fall 2010 (106 students total). All participants were health profession students from nursing, pharmacy, and allied health sciences (physical therapy, occupational therapy, physical assistants, etc.).

Instrumentation

The Inventory for Assessing The Process of Cultural Competence-Student Version (IAPCC-SV) was developed by Campinha-Bacote, in, 2007. The IAPCC-SV is designed to measure the level of cultural competence and culture desire among health profession students. Written permission was obtained to utilize the IAPCC-SV to evaluate pre and post learning outcomes of the course.

The IAPCC-SV is a pencil/paper self-assessment tool, consists of 20 items that measure the five cultural constructs of desire, awareness, knowledge, skill and encounters. The IAPCC-SV uses a 4-point Likert scale. Completion time is approximately 10–15 min. Scores range from 20 to 80 and indicate whether a student is operating at a level of cultural proficiency, cultural competence, cultural awareness or cultural incompetence. Higher scores depict a higher level of cultural competence.

Validity and Reliability

The IAPCC-R was developed for healthcare professionals and graduate students in 2002 and has been reported as reliable and as producing valid results over 60 times nationally and internationally (Campinha-Bacote, www.transculturalcare.net). The IAPCC-SV (developed in 2007 as the Student Version of the IAPCC-R tool) has yet to receive quite as many reports of validity, but to date at least six (6) studies (www.transculturalcare.net) report positive and reliable results (Fitzgerald et al., 2009; Young, 2009; Hsiu-Chin, 2010; Marie, 2010; Okere et al., 2011). Hsiu-Chin used the instrument in a pre/post test quasi-experimental study design with 26 nursing students, where results indicated that the reliability for pre-test data for the total score was an alpha of .66 and the alpha of the post-test data for the total score was .76. Similar results were found in a variety of health professions; for example, in Okere's study of 39 student physical therapists, the results revealed that the IAPCC-SV demonstrated good internal consistency with a Cronbach's Alpha of .75 and good test–re-test reliability of .870. Findings from these studies indicate that participants in post-educational interventions had statistically significantly increased their level of cultural competence (Campinha-Bacote, 2010). Furthermore, Campinha-Bacote recommends use of

qualitative means such as journaling and field notes along with this quantitative tool (Sagar, 2012, p. 44).

Ethical Consideration

The University's Institutional Review Board (IRB) approved the study (IRB-09-PNAH-17). Research was supported by fund from the Health Sciences Excellence in Teaching Initiatives, which covered course development, teaching methodology, and teaching evaluation (#ET091010).

As an elective course, all students were voluntary participants, and they were notified of the course's experimental nature. Additionally, students were not required to participate in the study element of the course, and had the option of taking the class without participating in the associated IAPCC-SV evaluations. Those who chose to participate then signed a consent form. They were provided an explanation of the IAPCC-SV instrument before completing the pre and post surveys, and all student identities were kept confidential.

Statistical Analysis

Descriptive statistics of the socio-demographic variables were estimated using frequency distributions. In addition, univariate statistics including means, medians, standard deviations, and ranges were estimated for the IAPCC-SV scores at baseline and at the end of the study (pre and post-test). These estimates were further summarized by gender, specialty, race and semester. In order to determine changes in summary IAPCC-SV scores from pre-test to post-test, paired t-tests were conducted. These paired analyses were also stratified by gender, specialty, race, and semester. Where sample sizes in subgroups were small (<30) or skewed, distribution for summary scores was observed and Wilcoxon signed rank tests were used. Finally, to examine whether the students who participated in the spring semester had changes in IAPCC-SV scores (post-test minus pre-test) that were significantly different from those who took part in the fall semester, independent sample t-tests were also administered. A similar test was run to examine if changes in IAPCC-SV scores were significantly different by gender and the one-way ANOVA test used to compare differences in mean change by specialty. All the aforementioned statistical analyses were conducted in SPSS version 19 and the alpha value was set at 0.05.

Results

Quantitative

Table 1 presents the characteristics of students' population (total number of participants, age, gender, profession and race).

Table 2 summarizes the results of the paired analyses, which evaluated differences in IAPCC-SV scores from pre-test to post-test. As shown, there were statistically significant changes in IAPCC-SV scores before and after the course. More specifically, we observed an improvement in scores from baseline (pre-test) to study end (post-test) overall (Pre-Mean = 60.8; Post Mean = 70.6; $p<0.001$). Changes by subgroups also tended towards improvement in IAPCC-SV score from baseline. As shown in Table 2, there were statistically significant increases in IAPCC-SV scores across gender, (Males: $p<0.003$; Females $p<0.001$) specialty, (Allied Health: $p<0.001$; Nursing $p<0.002$; Pharmacy $p<0.001$), ethnicity (Black: $p<0.001$; Other $p<0.003$), and class semester subgroups (Spring: $p<0.001$; Fall: $p<0.001$).

Findings to examine whether the magnitude of improvement differed by semester, specialty, and gender found the following results. Participants who took part in the fall semester had changes in IAPCC-SV scores (post-test minus pre-) that tended to be higher from those who took part in the spring semester; however this finding was only borderline significant. (14.2 vs. 8.03; $p=0.065$). Students who were in the pharmacy specialty showed greater improvement in IAPCC-SV scores compared to nursing (6.1 vs. 15.8; $p=0.04$). Males, compared to females had a similar level of improvement in IAPCC-SV scores.

Table 1
Characteristics of students who attended the cultural competency course N = 106.

Characteristic	N[a]	%
Age		
<23	53	54.1
≥24	45	45.9
Gender		
Male	19	19.4
Female	79	80.6
Specialty		
Allied	24	24.5
Nursing	32	32.7
Pharmacy	42	42.9
Race		
AA/BL/CA[b]	80	82.5
Other[c]	17	17.5

[a] Frequencies do not add up to total sample because of missing data.
[b] African American, Black, Caribbean.
[c] Native American/Alaskan Native/Pacific Islander, Caucasian, Latino, Hispanic, Asian.

Qualitative

Along with the IAPCC-SV pre- and post-tests, students were asked to write periodic portfolio/journal reflections, for a total of eight entries over the course of the semester. These journals were submitted directly to the teacher (they were not shared online with other students), and were designed to allow students to react to class content. Students often used them to examine their own beliefs, and biases in light of class discussion. This qualitative feedback allowed the teacher to observe trends or changes in students' opinions, reactions, and thought-patterns regarding cultural differences. Upon the culmination of the course, the journal entries were re-examined to trace any changes in cultural competency and awareness, and it was found that overall students experienced an increase in sensitivity and competency. Additionally, the final class meeting of the course was devoted to a group discussion in which students were asked to reflect on developments and changes related to cultural competency that they noticed both in themselves and among their classmates.

Table 2
IAPCC-SV scores at pre-test and after completion of cultural competency training stratified by gender specialty, race and semester.

Characteristic	N	Mean Score	Median Score	SD	Range	p-Value[a]
Pre overall	100	60.8	61.0	7.6	35–80	<0.001
Post overall	86	70.6	72.0	8.1	24–80	
Pre male	17	59.2	58.0	4.6	50–68	0.003
Post male	13	72.0	72.0	5.2	62–78	
Pre female	75	60.9	61.0	7.4	37–78	<0.001
Post female	67	70.3	72.0	8.8	24–80	
Pre allied health	23	60.0	58.0	7.1	48–76	<0.001
Post allied health	18	72.3	72.0	3.9	64–78	
Pre nursing	32	61.9	61.0	6.1	42–75	0.002
Post nursing	27	68.2	71.0	11.7	24–80	
Pre pharmacy	37	59.9	60.0	7.7	37–78	<0.001
Post pharmacy	35	71.6	74.0	6.3	56–80	
Pre Black ethnicity	76	60.8	61.0	7.1	37–78	<0.001
Post Black ethnicity	63	70.3	72.0	8.8	24–80	
Pre other ethnicity	15	59.5	58.0	7.0	44–71	0.003
Post other ethnicity	16	72.1	74.0	6.0	59–78	
Pre spring class	79	61.0	62.0	7.8	35–80	<0.001
Post spring class	37	70.6	70.0	6.0	56–80	
Pre fall class	51	60.6	60.0	7.4	37–76	<0.001
Post fall class	49	70.7	73.5	9.5	24–80	

[a] p-Values based upon paired t-tests or Wilcoxon-signed rank tests.

Below are excerpts from student reflections from the first weeks of the course:

> Student 1: "It is very frustrating dealing with non-English-speaking people all the time."
> Student 2: "How can I accept *them* [LGBT]? I can still hear the drums in my ears from my church days…you know well what I mean."
> Student 3: "My aunt left three daughters to live with another woman, please explain to me why?? She was so close to me, I loved her, I love her, but that is against my religion."

By the end of the course, all three students had experienced a broadening of perspective on these topics. Student 1 wrote in her journal, "We should be working together and compromising, yet we are accommodating and encouraging these individuals to not learn the language," revealing increased consciousness of the intricacies of immigrant experience. After one student decided to reveal to the class that she identified as lesbian, Student 2 reflected that the course opened her to the possibility that those she classified as "*them*" were really her classmates and even friends, and that she would now be more sensitive to the feelings of others. And in the final class discussion, Student 3 confessed that she had contacted her aunt in hopes of reconnecting in spite of her religious beliefs.

In regards to the course design, journal entries revealed that students appreciated the non-traditional structure: "What I liked most was that the course did not dissect the different types of cultures, one by one, rather discussed the different cultures in relation to everyday experiences that we will encounter as health professionals." Another student wrote: "This class has fulfilled all my expectations and beyond. I have never been in a class where there was so much interaction and excellent and productive discussions. This class just made me realize how I was culturally insensitive…I will not only learn more about other cultures, but be able to share my knowledge among my co-workers, friends, family or anyone willing to learn. There are different cultural practices that may seem 'weird' but the best way to describe them is 'unique'."

Overall, students expressed satisfaction with the course and the effectiveness of instruction methods. One student wrote, "At the end of the class, I have noticed that with dealing with my different patients, friends, and family, that I am not so quick to impose my beliefs, but instead listen to them and try to understand the reasoning behind the things they were doing or saying."

Overall, the written feedback from students revealed understanding of several key points:

- Nearly all students *overestimated* their cultural competency level at the beginning of the course
- There is no final end product that is labeled "cultural competence"; it is an *ongoing process*
- Memorizing a multitude of facts about a culture becomes less important than understanding, applying, and appreciating the cultural context of facts and the importance of *congruent care*
- All students expressed the importance of understanding their own culture including *bias and stereotypes*.

Discussion

The intervention was mapped on: *Healthy People 2010's* (2002) two major goals that require culture-specific care: 1) increase quality and years of healthy life for all by examining "quality of life" and meaning of health and well-being within cultural context, and 2) eliminate health disparities among different segments of the population that necessitate culture specific and competent actions that designed and customized to *fit* client's cultural values, beliefs, and traditions. It was also influenced by the American Association of Colleges of Nursing (AACN) Toolkit of Cultural Competent Education for Baccalaureate Nurses (2008) and in part by the National League for Nurses' (NLN, 2002) Core Competencies of Nurse Educators (facilitate learning, facilitate learner development and socialization, and function as change agent).

While designing the course, we focused on answering the question of "Which comes first: culturally congruent/competent care or culturally congruent/competent education?" (Leininger and McFarland, 2006; Jeffreys, 2010). The increasingly diverse, multicultural and multigenerational, student population in the United States necessitates educators at all levels to develop cultural knowledge, awareness, and sensitivity to help diverse learners to fulfill their potential and to avoid cultural misunderstandings that can become obstacles or barriers to learning. According to Diller and Joule (2005), culturally competent educators should value cultural differences, become aware of their own cultural assumptions and preferences, realize how cultures can collide and know how to respond, familiarize themselves with their students' cultures, and institutionalize cultural knowledge so that institutions can adapt more easily to increasing cultural and generational diversity on campuses (millennial generation). For example, a culturally competent teacher understands that Asian students might avoid eye contact out of respect, and African-born students might hesitate to ask questions because teachers are regarded as authority figures in many African cultures. Also, a teacher who is new to an institution or country might lack cultural competence to understand that millennial students are simply being 'straightforward' rather than 'confrontational' when addressing teacher in class. Without cultural competence, both sides – students and teachers – can go through cultural pain, clash, assault, and shock. The culturally competent educator can gain students' trust to openly discuss cultural biases, stereotypes and misperceptions, negotiate behavior and attitude modification, and then restructure teaching–learning strategies to match class dynamic and millennial culture that will shape the nation's future health profession.

The University's Internal Review Board (IRB) approved the study and the Likert-scale instrument (IAPCC-SV), which was utilized to measure and evaluate pre/post culturally competent learning outcomes of the course in terms of the five constructs of Campinha-Bacote (2007): cultural awareness, knowledge, skills, encounters and desire. The Campinha-Bacote (2007) Cultural Competency Care Model provided the conceptual framework for this study, in which desire is defined as "the motivation of the healthcare professional to 'want to engage in the process of becoming culturally competent; not the have-to'" (p. 21); awareness is defined as "the deliberate self-examination and in-depth exploration of our personal biases, stereotypes, prejudices and assumptions that we hold about individuals who are different from us" (p. 27); knowledge is "the process of seeking and obtaining a sound educational base about culturally diverse base" (p. 37); cultural skill is the ability to perform accurate holistic health assessment and encounter is the methods for effectively gaining deeper respect and understanding of a variety of cultures and traditions in a "sensitive and humanistic manner"(p. 81). For the purposes of this study, Campinha-Bacote's definition of cultural competency, "process in which the healthcare provider continuously strives to achieve the ability to work effectively within the cultural context of a client, individual, family or community" (2003, p. 54), was used. Constructs of 'encounter' and 'desire,' as outlined in The Process of Cultural Competence in the Delivery of Healthcare services Model by Campinha-Bacote (2007), were utilized in particular throughout the semester with emphasis on developing intercultural communication skills (cognitive, practical and affective) (Chen and Starosta, 2000).

Limitations

To compare pre and post-test for each individual student, students were asked to assign own identification (ID). Some pre/post surveys' IDs didn't match; therefore, they were excluded. It is to be noted that some of the significant findings were, based upon small sample sizes in subgroups (<30) or skewed data and were tested using non-parametric testing (i.e. the Wilcoxon signed rank test). As non-parametric tests are

considered weaker compared to parametric tests, limited interpretation of mean differences before and after the intervention is warranted. Further stated, definitive conclusion on the impact of the course, particularly where insufficient sample sizes were observed cannot be made.

Implications for Health Professions' Education

We have confidence that health professions educators can benefit from this study that contributes to knowledge development such as: understand and analyze complexity and challenges facing educators to prepare culturally competent health professionals from a diverse students population; emphasize the process of learning with understanding of process/product learner, and active/passive learner; and analyze the applicability of innovative teaching styles and strategies that address gaps in knowledge, skills, and attitudes of diverse millennial student population in inter-professional setting.

Conclusion

Results of IAPCC-SV showed that because of course participation and inter-professional educational activities, the level of cultural competency among health profession students improved post-educational intervention. Collectively, the five constructs of cultural knowledge, attitudes, desire, encounter, and skills were significantly progressed by students who completed the course. According to students' feedback, engaging in an interdisciplinary course that utilized eclectic and culturally congruent teaching–learning strategies that addressed and matched diverse millennial and learner needs, as well as enthusiastic culturally competent teachers, provided both breadth and depth of learning. Students acknowledged overestimating their cultural awareness and competency level and the fact that culture competence is an on-going process. In addition, students agreed that memorizing multitude of facts about a culture becomes less important than understanding, applying and appreciating the cultural context of facts and importance of congruent individualized care. All expressed the importance of understanding their own culture including bias and stereotype. Finally, periodic course revision is recommended based on assessment of course outcomes, learner needs, and healthcare trends in society. Because of budgetary limitations, the scope of this study was confined to analysis of cumulative intervention effects only, instead of an extensive analysis of the individual constructs of IAPCC. Future analysis and study trials would ideally isolate and address the individual constructs.

The assessment results of the study will be used to improve teaching, learning and delivery of services to students. Therefore, based on assessment results, the course has been recommended to be offered as a future Interdisciplinary Course for all Health Sciences students, including medical and dentistry students.

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